PM TRCS Helps Digitize the 3rd Infantry Division's Communications Capabilities

Chris Tourge

In late March and early April 2003, *Operation Iraqi Freedom* began and coalition forces streamed north to Baghdad at a ferocious pace. A pace so swift, calculating and wide that some units became too far dispersed from each other to speak via their decades-old communication equipment. To prevent this problem from recurring, a new technology application was needed, and a Fort Monmouth, NJ,-based unit found a solution.

JNN network sanctuary hub provides connectivity with direct physical connection to the global information grid (GIG) and up to 76-megabyte-per-second data rates from a protected base to up to 16 forward-deployed JNN shelters. (U.S. Army photo.)

Ahead of schedule and under the direction and leadership of Robert F. Golden, Project Manager (PM) Tactical Radio Communications Systems (TRCS), created the Joint Network Node (JNN) and began fielding the equipment to the 3rd Infantry Division (3ID) based at Fort Stewart, GA, in less than 6 months using rapid acquisition procedures.

"We were tasked with designing and creating this product in April 2004, delivering the first JNN by August and completely fielding the 3ID by October," explained Barton H. Halpern, PM TRCS Technical Management Division Chief. "So far we are on schedule and expect to stay that way."

PM TRCS created an internal team with LTC Vincent Amos as "Trail Boss." Although TRCS was the designated lead for this project, success could not have been achieved without strong support from their government team members and product manufacturers, General Dynamics

A JNN 3ID operator monitors Internet and SIPRNET activity on the network. (Photo by Robert Wilson, PM TRCS.)

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and Data Path International. The government team included Command, Control and Communications Tactical's (C3T's) Special Projects Office members; Communications-Electronics Research, Development and Engineering Center; MITRE and Communications-Electronics Command's Software Engineering Center.

"The commanders are excited about receiving this new broadband communications capability," Amos said. "They do not want to return to the theater of operations with the same problems and limitations they encountered using the older Mobile Subscriber Equipment (MSE)."

Most Army communications gear is aligned with the MSE. "This technology is more than 20 years old. It was conceived for voice transmission and has been adapted for data transmission — but it wasn't designed for it," Halpern remarked. "This was proven during the northward assault on Baghdad when units became separated by great distances. The previous generation of equipment and technology wasn't

A JNN shelter provides Internet connectivity equivalent to that of a small office building to a brigade- or division-size command post. (Photo by Michael Castellana, PM TRCS.)

Normally installed in command posts situated near JNN shelters, data cases provide user access points for Internet-based computers and Voice Over Internet Protocol telephones. (U.S. Army photo.)

was crucial to JNN's success — the right amount and type of funding was received in time to properly execute this high-visibility program.

"Although the digital technology was available commercially, we had to have certain parts that were not on contract yet and you can't just go to the General Services Administration and say, 'I'll take two of these, three of those and I need them by this date,'" Halpern reflected. "In addition to ensuring JNN was developed contractually on time and within budget, two critical accomplishments, systems engineering and teamwork created the conditions to make this project a complete success."

"Developing new protocols and configurations is no easy task," Halpern explained. "Going back to the drawing board is never easy. Doing this and doing it successfully with new people meeting one another from various government organizations and private companies is a true testament to the cohesiveness of Team Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (Team C4ISR) and the Army's work ethic toward mission accomplishment," he concluded.

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designed for the distances they were isolated from one another," Halpern continued.

The JNN suite of equipment will operate "on the halt" and on the "quick halt." A commander will have access to Joint and strategic communications services by using the Defense Information System Network through a Standard Tactical Entry Point site within 30 minutes or less using JNN. JNN is a high-bandwidth Internet Protocol (IP)- based system that uses multiple transmission means including EMF, X-Band, Ku-Band and satellite, and it uses terrestrial line-of-sight radio communications.

JNN also falls in with the Army's Joint Network Transport Capability-Spirals and bridges to the Warfighter Information Network-Tactical Program that is expected to be operational by FY08, as well as the overall Army's transformation to modular units. The addition of JNN will offer more communication options, including greater bandwidth access down to battalion level. With the Army realigning itself

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into units of action/employment, battlefield commanders will have more direct access and control further down the chain of command.

"JNN provides unit commanders three things — better, more sophisticated digital technology, increased bandwidth and Joint task force interoperability," Halpern stated. "Currently and in the past, Army units used, or rather, were limited to using, one communication network to report back to their larger entity. Now, with JNN, battalions will have the capability to communicate via dozens of networks, with higher headquarters and directly with fellow battalions."

"Each node will report to a hub," Halpern continued. "A hub is a larger device capable of transporting the battalion-to-battalion communication. Theoretically, there will be 16 JNNs per hub, and two hubs per division."

As with any new product that must be researched, developed, tested and manufactured in a limited amount of time, getting sufficient funding at the right time was crucial to success. Funding